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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/094,854 07/20/93 ANDERSON

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EXAMINER

KNAPP, J

C2M1/0316

ART UNIT

PAPER NUMBER

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3205

DATE MAILED:

03/16/94

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

This application has been examined Responsive to communication filed on _____ This action is made final.

A shortened statutory period for response to this action is set to expire ~~THREE~~ month(s), _____ days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. Notice of References Cited by Examiner, PTO-892.
2. Notice of Draftsman's Patent Drawing Review, PTO-948.
3. Notice of Art Cited by Applicant, PTO-1449.
4. Notice of Informal Patent Application, PTO-152.
5. Information on How to Effect Drawing Changes, PTO-1474.
6. _____

Part II SUMMARY OF ACTION

1. Claims 1-23 are pending in the application.

Of the above, claims _____ are withdrawn from consideration.

2. Claims _____ have been cancelled.

3. Claims _____ are allowed.

4. Claims 1-23 are rejected.

5. Claims _____ are objected to.

6. Claims _____ are subject to restriction or election requirement.

7. This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. Formal drawings are required in response to this Office action.

9. The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are acceptable; not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been approved by the examiner; disapproved by the examiner (see explanation).

11. The proposed drawing correction, filed _____, has been approved; disapproved (see explanation).

12. Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has been received not been received been filed in parent application, serial no. _____; filed on _____.

13. Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. Other

EXAMINER'S ACTION

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1. Claims 2-5, 10, 17 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2-5 are vague and indefinite because each adds at least one alloy component to the solder of claim 1 that was claimed to consist essentially of specific amounts of Ag, Cu, and Sn. Thus, the addition of further alloy components to the solder of claim 1 would be contradictory.

Claims 5, 10, and 17 are vague, indefinite, and contradictory because those claims specifically claim the inclusion of lead in a solder composition that has been previously stated to be lead free.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4, 6, 7, 9, 12, 13, 16, 18, 20-22 are rejected under 35 U.S.C. § 102(b) as being anticipated by Ferrie're et al. (U.S. 1,437,641).

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See lines 78-82. Note that inherently the compositional range given would include at least one composition with the melting range and phase distribution claimed in claims 6, 7, 12, 13, 18, 20, and 21.

4. Claims 1, 2, 4-7, 9-14, 16-23 are rejected under 35 U.S.C. § 102(b) as being anticipated by JA 42-18219.

See the abstract. In regard to claims 6, 7, 12, 13, 18, 20, and 21, inherently at least one composition within the compositional range taught would meet the claimed limitations.

5. Claims 6, 7, 11-14, 18-23 are rejected under 35 U.S.C. § 102(b) as being anticipated by Mizuhara (U.S. 4,643,875).

See column 1, line 37, through column 2, line 9. The limitations of claims 6, 7, 12, 13, 18, 20, and 21 are inherently met by the teaching.

6. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same

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person or subject to an obligation of assignment to the same person.

7. Claims 3, 8, 15 are rejected under 35 U.S.C. § 103 as being unpatentable over Ferrie're et al. in view of Naton (U.S. 4,879,096).

Ferrie're et al. does not teach the inclusion of up to 10 wt% Bi in the solder. However, Naton teaches (column 2, lines 9-32) the addition of 0.1 to 3 wt% Bi to a Pb-free Sn-Ag-Cu solder since Bi increases the stress rupture point and creep strength and lowers the solder melting point. Therefore, it would have been obvious at the time applicant's invention was made to a person of ordinary skill in the art to modify Ferrie're et al. with Naton to include 0.1 to 3 wt% Bi in the solder to increase the strength of the solder and to lower its melting point.

8. Claims 3, 8, 15 are rejected under 35 U.S.C. § 103 as being unpatentable over Mizuhara in view of Naton.

Mizuhara does not teach the inclusion of up to 10 wt% Bi in the solder. However, Naton teaches the addition of 0.1 to 3 wt% Bi to a solder of a composition similar to that taught by Mizuhara in order to increase the solder's strength and decrease its melting point. Therefore, it would have been obvious at the time applicant's invention was made to a person of ordinary skill in the art to modify Mizuhara with Naton to add 0.1 to 3 wt% Bi to the solder for increased strength and for a decreased melting point.

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9. Applicants are requested to state which claims stand or fall with the independent claim upon which they depend. It is noted that all dependent claims which applicants believe are patentably distinct from the independent claim upon which they depend must be separately argued; *in re Nelson*, 2 USPQ 2d 1525.

10. The following other references are cited as material: JA 52-6468; and Daudelin.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Knapp whose telephone number is (703) 308-0667.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1148.

JK
J. Knapp/eb

March 03, 1994

P. Austin Bradley
P. AUSTIN BRADLEY
SUPERVISORY PATENT EXAMINER
GROUP 3200